

CHAPTER 3 UTILITY INFORMATION

This section presents a summary of utility owner information in the corridor and in the subsequent sections presents more specific information regarding specific types of utilities and some options for relocation. The final sections of this section identify the basis for determining prior rights. Chapter 12 includes a summary of the utilities that would likely be relocated.

3.1 SUMMARY OF UTILITY OWNER INFORMATION

Many utilities presently cross the SR 303L corridor between Van Buren Street and US 60 (Grand Avenue). These utilities include telephone, gas, electric, cable, water, and sewer facilities. Also, because much of the land use along the corridor is agriculture, numerous irrigation facilities exist across and along the highway. Irrigation facilities are discussed in Sections 3.3 and 3.4. The majority of the utility crossings are located at the major section line roadways. With the increase in development in the future, the request for more utilities crossing the corridor will occur.

Table 3-1 provides a list of existing utility owners and facility locations. The large drainage channel along the west side of SR 303L will require relocation of most underground utilities that cross the channel.

Table 3-1 Utility Owners and Facility Locations

Company	Utility	Existing/ Future	Size/Type	Location
QWEST	Telephone Fibre Optic	Existing	Underground	US 60, Clearview Boulevard, Bell Road, Waddell Road, Northern Avenue, Glendale Avenue, Bethany Home Road, Indian School Road, McDowell Road.
Southwest Gas	Gas	Existing	16" 4"/6" 6" 2 # 6" 2" 6" 6"	US 60 Mountain View Boulevard Clearview Boulevard Bell Road Waddell Road Indian School Road Van Buren Street
Arizona Public Services	Power	Existing	Overhead	US 60, Clearview Boulevard, Greenway Road, Waddell Road, Peoria Avenue, Cactus, Road, Olive Avenue, Northern Avenue, ½ mile south Glendale Avenue, Camelback Road, Indian School Road, Thomas Road, Cotton Lane, McDowell Road
			Underground	Bell Road
Cox Communication	Cable TV	Existing	Underground	Mountain View Boulevard, Clearview Boulevard, Bell Road, Northern Avenue
Arizona American Water	Water	Existing	12" 8" 16" 12"	Greenway Road ½ mile north of Greenway Road Clear View Boulevard Mountain View Boulevard

Company	Utility	Existing/ Future	Size/Type	Location
City of Goodyear	Sewer	Existing	18"/24" 15"	McDowell Road from Perryville Prison
City of Surprise	Sewer	Existing	15" 15"	Bell Road ¼ mile south of Bell Road
MCI WorldCom	Fibre Optic	Existing	Underground	US 60
Broadwing Communication	Fibre Optic	Existing	Underground	Cotton Lane

3.2 ELECTRIC POWER FACILITIES AND IMPACTS

Table 3-2 provides a list of the specific primary and secondary electrical cables that serve domestic properties and lie within the SR 303L corridor. The majority of the lines cross the proposed freeway at the arterial cross street and are mounted on wooden poles with the exception of Bell Road where the power is located underground. The power lines would have to be relocated and/or raised as each junction is constructed. In addition, there are three 69kv overhead transmission lines that cross the SR 303L at Thomas Road, McDowell Road, and US 60. These higher power cables would also have to be realigned and provision made so that there is sufficient clearance over the proposed freeway.

Table 3-2 Arizona Public Service Company (APS) Power Conflict Locations

Location	Type of Supply
US 60	Primary Overhead domestic supply. 69kv Overhead transmission
Clearview Boulevard	Secondary underground domestic supply
Bell Road	Underground secondary domestic supply
Greenway Road	Primary Overhead domestic supply
Waddell Road	Primary Overhead domestic supply
Cactus Road	Primary Overhead domestic supply. 69kv Overhead transmission
Peoria Avenue	Primary Overhead domestic supply
Olive Avenue	Primary Overhead domestic supply
Northern Avenue	Primary Overhead domestic supply
½-mile south of Glendale Avenue	Primary Overhead domestic supply
Camelback Road	Primary Overhead domestic supply
Indian School Road	Primary Overhead domestic supply. 69kv Overhead transmission
Thomas Road	Primary Overhead domestic supply. 69kv Overhead transmission
Cotton Lane/I-10	Primary Overhead domestic supply. 69kv Overhead transmission
McDowell Road	Primary Overhead domestic supply

At the I-10 system interchange, there is a 69kv transmission line that runs north/south parallel with Cotton Lane. Due to the complexity of the interchange, consideration may have to be given to rerouting the line around the system interchange. Alternatively, the cable could be buried in the north/south frontage roads.

3.3 IRRIGATION DISTRICT FACILITIES AND IMPACTS

The proposed SR 303L roadway passes through approximately 12 miles of agricultural land. This land is arable and currently in use growing a variety of crops. Some of the current crops include roses, cotton, citrus, and lettuce. These fields are currently irrigated using water delivered to the field by a system of ditches and pipes. The continuous use of these water delivery facilities is very important to the farmer and landowner. Even short interruptions of service can be harmful to crops. Few alternatives are available to the scheduled and continuous delivery of irrigation water. It will be extremely important to coordinate with the users of the irrigation water during the construction of the roadway to prevent damages to crops. Existing facilities include irrigation pipes (metal and concrete), concrete lined and earthen irrigation ditches, turnout and delivery control structures, tailwater ditches, wells and well sites, and tailwater sumps and irrigation drainage features. In addition to the ditches and pipes, there are approximately 16 wells that will be impacted by the roadway construction. Well sites and irrigation facilities that may require relocation with the planned freeway are summarized in Section 12.15. These wells are located within the proposed project right-of-way. Existing irrigation facilities and wells are shown on the Irrigation and Well Relocation Plans included in Chapter 15.

Irrigation facilities that are affected by the proposed SR 303L can be divided into two main groups based on the ownership or user of the facility: private users and irrigation or water districts. The impact of Loop 303L construction on private irrigation facilities is discussed in Section 3.4. The irrigation districts impacted by Loop 303L include the Maricopa Water District (MWD), Adaman Water Company (AWC), and RID. Each district/company has various interests and requirements to be met and maintained during and after the construction of the proposed SR 303L facilities.

District facilities are owned and operated by the MWD, AWC, and RID for the benefit of their members. The irrigation districts are operated by a general manager and include a few employees who perform operation and maintenance activities. The districts are administered by a board of directors that is typically made up of farmers and landowners within the district boundaries.

Maricopa Water District

The proposed roadway has the largest impact on the MWD whose facilities are typically located on the section line roadway crossings of SR 303L. They are typically on the south side of the east-west roads. The MWD owns five wells along the alignment that will have to be relocated to accommodate the SR 303L project; these wells are located in the vicinity of Clearview Boulevard (Well No. 3-36), Greenway Road (Well No. 5-12C), Waddell Road (Well No. 6-13), Peoria Avenue (Well No. 8-25), and Olive Avenue (Well No. 9-36).

The MWD irrigation wells are 16 to 20 inches in diameter. The wells are more than 1,000 feet in depth and are steel lined with no screening or filters. The wells usually run only in the winter for augmentation of the surface water. Production of the wells ranges from 450 gallons per minute (gpm) to 1,120 gpm. Water quality of the wells is very suitable for irrigation purposes. Surface water supplied from Lake Pleasant and delivered via the Beardsley Canal provides the majority of the water used in the MWD.

The MWD irrigation district facilities typically include lateral irrigation canals that are aligned east and west and sub-lateral canals that lie in a north-south direction. The lateral canals lie on section line roads from Clearview Boulevard (lateral 4) to Northern Avenue (lateral 10). Laterals 3, 4, and 10 cross the alignment as pressure piped laterals while the remainder of the laterals cross the alignment in culvert pipes with open-channel canals approaching and leaving the roadway. Figure 3-1 shows the layout of the laterals and sub-laterals in the area.

MWD no longer allows tailwater to enter their facilities. While some tailwater may enter their system today because of historical facility design, the practice will not be permitted in the future. Management of the “on farm” tailwater is the responsibility of the farmer/landowner.

Adaman Water Company

AWC is a multi-function company that supplies water for irrigation and domestic use. AWC also maintains drainage channels to protect district farmlands. AWC currently owns and operates five active wells within the SR 303L corridor. These wells are located at Bethany Home Road (Pump 13A), Glendale Avenue (Pump 12A), a well between Bethany Home Road and Glendale Avenue (Pump 12B) and two wells along Northern Avenue (1A and A2). There is a well site located approximately ¼ mile south of Northern Avenue in the SR 303L corridor but this location has been abandoned.

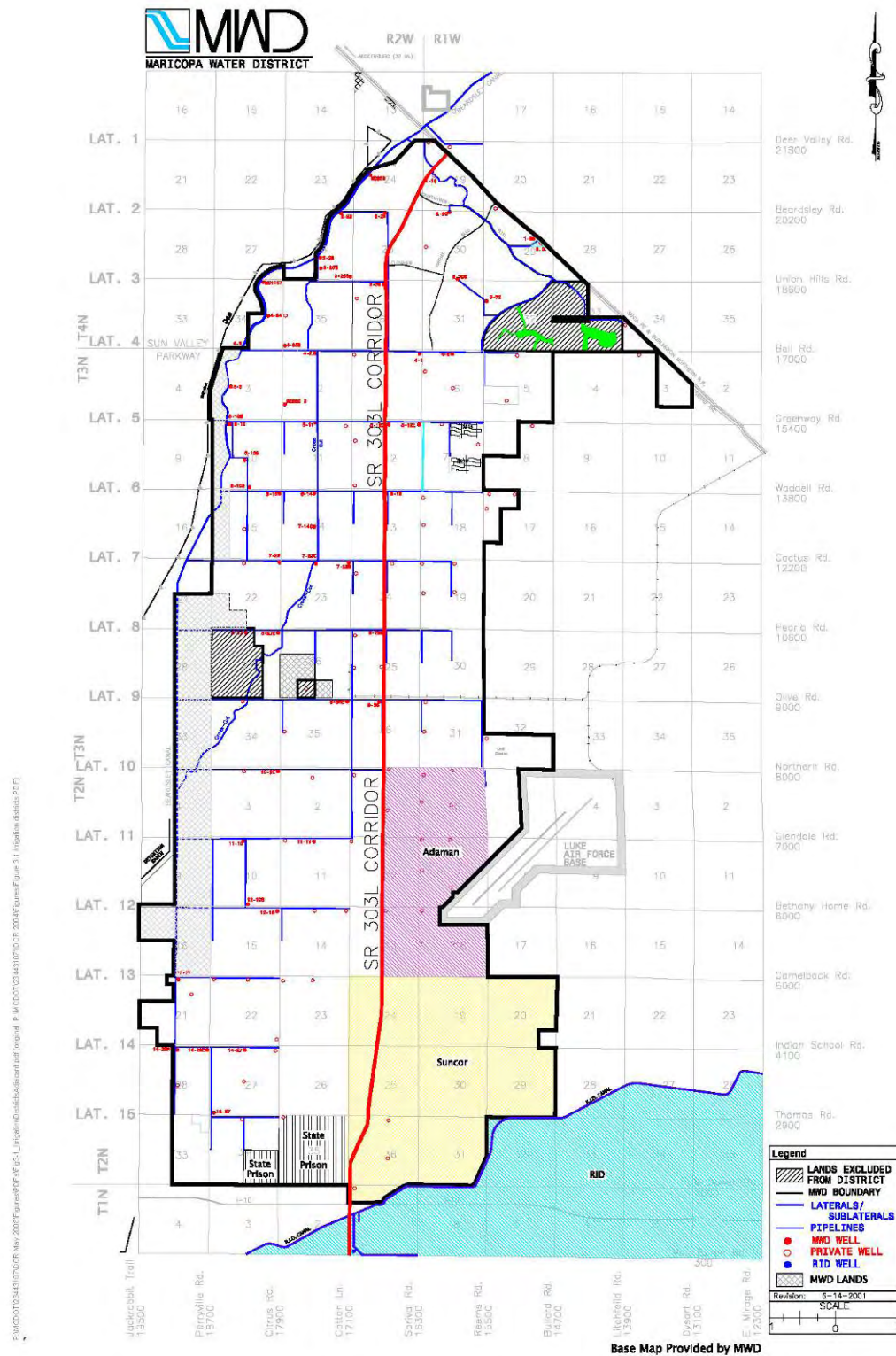


Figure 3-1 Irrigation Districts Adjacent to SR 303L

AWC irrigation wells are 16 to 18 inches in diameter, more than 1,000 feet in depth, and steel lined with no screening or filters, and run year round. Water production from the wells ranges from 1,300 gpm to 1,800 gpm. The wells are currently pumping water from a depth of approximately 300 feet. Water quality of the wells is very good at depths below 700 feet with low levels of nitrates. About 80% of the approximately 8,000 acre-feet of irrigation supplied each year is groundwater. The remainder is surface water that is supplied by the MWD through a ditch and 30-inch pipe along the south side of Northern Avenue to an irrigation structure located on the south east corner of Northern avenue and SR 303L. This irrigation structure is the highest point within the AWD irrigation network and will have to be relocated and the network of pipes reconnected.

The proposed SR 303L skirts the western edge of the AWC district. AWC makes deliveries to district lands using an 18-inch pipeline (Lateral A) along the east side of the SR 303L corridor from Northern Avenue to Camelback Road. A second parallel pipeline provides increased capacity from Northern Avenue to about one-half mile south of Northern Avenue. The capacity of this double pipe section is approximately 700 miners' inches (17.5 cubic feet per second [cfs]). Both pipes are connected to the wells and deliver irrigation water to ditches adjacent to the farm fields. Similar pipelines are located parallel to Northern Avenue on the south side. Several sumps that collect irrigation tailwater exist along both sides of the SR 303L corridor. These sumps are connected by a combination of pipes and ditches, and the water is reused for irrigation.

Roosevelt Irrigation District

The existing RID main canal crosses the Loop 303L alignment several hundred feet south of I-10 and crosses I-10 east of the SR 303L corridor. This canal is the main irrigation water delivery source for the landowners in the district. Two turnout structures are located on the south side of the canal east of the Cotton Lane.

No specific survey data or as-built information was provided for the canal crossing. A site reconnaissance provided the following existing conditions information.

- Estimated bottom width 16 feet
- Estimated side slope 1:1
- Estimated depth (lined) 7 feet
- Estimated depth (overall) 10 feet
- Estimated slope 0.0003 ft/ft

The existing canal invert appears to be approximately 10 feet below existing grade (at Cotton Lane). This is typical of the canal through the project area.

3.4 PRIVATE IRRIGATION FACILITIES AND IMPACTS

Throughout the 12 miles of agricultural lands impacted by the Loop 303L, many of the facilities are privately owned. Private irrigation facilities are those used by individual farmers or landowners and operated by those farming the land. These facilities may be adjacent to or cross the SR 303L roadway. Field ditches, tailwater ditches, sumps and turnout structures, and some wells are included in private irrigation facilities. The largest section of private land crossed by the roadway alignment is in the southern portion of the area where SunCor owns the land and the associated irrigation facilities. This land currently appears to be fallow with some of the irrigation facilities inoperable. It is reasonable to assume that the area will soon be developed and removed from agricultural production. For the purposes of this report, however, it was assumed that all impacted facilities would require relocation. SunCor Development currently owns the farmland along the alignment between Indian School Road and McDowell Road

3.5 MUNICIPAL AND OTHER LOCAL UTILITY IMPACTS

There are two areas of conflict between existing city sewer systems and the proposed SR 303L. Both areas occur at depressed sections of the freeway at Bell Road and McDowell Road.

At Bell Road, the City of Surprise has a 15-inch sewer running along the north side and a 15-inch bypass sewer crossing SR 303L between Bell Road and Greenway Road. The highway profile is designed to pass above the bypass sewer. There is a jacking sleeve surrounding the pipe; however, some protective encasement may be required due to the relatively small cover. Through discussions with the staff at the City of Surprise, a number of options were discussed for the relocation/diversion of the 15-inch sewer crossing at Bell Road:

- 1. Divert the flow into the 15-inch by-pass sewer that runs south of Bell Road and eliminate the crossing at Bell Road. This option would require further investigation to determine if some or all of the flow can be accommodated in this pipe.
- 2. Install a new pipe parallel with the SR 303L to the proposed sewer at Peoria Avenue. This new pipe could be designed to take all the flow from the 15-inch pipe or any additional flow that cannot be accommodated in the by-pass sewer.
- 3. Install a lift station to take the flow under the proposed SR 303L.

Surprise stated that the lift station was the least desirable because of the maintenance liability.

The other area of conflict is at McDowell Road where an 18-inch pipe comes in from the west along McDowell Road and steps up to a 24-inch pipe at Cotton Lane as it heads east. The sewer is 12 feet deep and would be exposed when the SR 303L is depressed under McDowell Road.

There are a number of options to re-route the sewer discussed with the City of Goodyear:

- 1. Intercept flows from the west and pump into a proposed system running south parallel with Cotton Lane. A major re-design of the sewer system to accommodate the additional flows would be required.
- 2. Lower the sewer line so that it goes under the proposed SR 303L and provide a lift station to connect it to the existing sewer.
- 3. Relocate the sewer northward so that it passes under the SR 303L where the freeway is at a higher elevation.

The sewer from the prison and bar screening building will need reconstructed and should be combined with any new diversion.

3.6 RAILROAD FACILITIES AND IMPACTS

BNSF owns and operates the branch line that runs along the northern edge of US 60 and the Ennis Spur that crosses the SR 303L at Olive Avenue.

The branch line connects the Greater Phoenix Metropolitan Area with the main east/west line to California in northern Arizona. At present, there is a single track running alongside US 60. BNSF has allowed placement of permanent bridge piers within their right-of-way. The railroad is planning for commuter rail service in the future and wants to keep room to add an additional track on each side of the current track. Ideal spacing of tracks would be 25 feet centerline to centerline. BNSF requires 25 feet clearance on the outside of their tracks. The total desired continuous clear right-of-way is 100 feet.

The Ennis Spur starts at the branch line adjacent to US 60 between Greenway Road and Waddell Road. The spur extends diagonally to the southwest toward Luke AFB and delivers fuel to the AmeriGas underground gas storage facility located north of Luke AFB. The spur continues westward on the north side of Olive Avenue, crosses the SR 303L corridor to Cotton Lane where it turns to a north-south alignment. The spur serves a Fertizona fertilizer plant located in the northwest quadrant of Cotton Lane and Olive Avenue. BNSF has 100 feet of right-of-way across the SR 303L corridor. The right-of-way is north of and adjacent to the Olive Avenue right-of-way.

There are flashers located where SR 303L crosses the spur. The planking of the crossing was upgraded to concrete. Due to the heavy truck traffic, BNSF has indicated that they are having unusually high maintenance costs associated with the crossing. Generally one outbound and one inbound train use the spur across SR 303L per day. The amount of usage is not expected to change in the near future.

BNSF will probably have prior rights. Any construction on the tracks will be performed by BNSF and should be completed prior the highway construction. BNSF may require two years to complete their work.

3.7 OTHER UTILITY IMPACTS

There are a number of locations where existing gas pipes cross the SR 303L corridor. The pipes vary in size and material. All pipes will have to be relocated either by placing them under the SR 303L or within the realigned cross streets.

At US 60, a 16-inch steel gas pipe runs along the south side of the roadway. Due to the complexity of the interchange, discussions were held with Southwest Gas to determine suitable options to relocate the gas pipe:

1. Divert pipeline south of US 60 and jack under SR 303L where the roadway returns to ground level.
2. Depress gas main under the interchange. Follow the alignment of the ramps as they slope down then cross underneath each ramp in-turn to rise up the other side. This option would place the main some 25 to 30 feet deep and make access very difficult.
3. Obtain an easement from BNSF and place the pipeline within the railroad right-of-way. This option would require having the pipeline cross US 60 at two locations.
4. Attach the gas main to the proposed bridge for US 60 over the ramps. The *ADOT Guide to Accommodating Utilities on Highway Rights-of Way* states that gas mains will not be allowed on new structures. Due to the complexity of the interchange at US 60, ADOT staff stated that they would consider placing the gas main on the structure.

Other utility equipment that will be impacted by the proposed freeway include communication cables and water lines. Communication cables include telephone, fiber optic, and cable television. Most of these cables cross the proposed route at section line roads. There are two main locations where the fiber optic cable have a bearing on the route. At US 60, Qwest and MCI WorldCom each have cables running along the north side of US 60. The MCI cable is located within BNSF right-of-way. Both cables will be affected by the depressed ramps of the proposed interchange.

A fiber optic cable, owned by Broadwing Communication, is located on the west side of Cotton Lane and runs from Camelback Road to MC 85. South of I-10, the proposed freeway will replace Cotton Lane. The fiber optic cable would need to be relocated and could be placed in the planned frontage road.

Arizona-American Water Company has five pipelines that cross the SR 303L corridor. These crossings are concentrated at the northern end of the project between Greenway Road and US 60. At two locations between Greenway Road and Bell Road, the pipelines conflict with the planned depressed section of the proposed roadway and will need to be lowered. The remaining conflicts are between Bell Road and US 60. The existing interim roadway was recently constructed so it is likely that the water lines were placed so that they will not have to be relocated.

3.8 UTILITIES THAT MAY HAVE PRIOR RIGHTS

The following is a list of utilities that may have prior rights based upon early indications from the owners or based upon experience on other highway projects. The term “prior rights” indicates that the utility was located prior to the highway and the project would normally pay the cost of relocation during the highway construction. Utilities without prior rights generally must pay for their own relocation and that relocation should take place before highway construction. A final determination of prior rights will be made during final design of the roadway.

- Arizona American Water – May have prior rights and should relocate during construction.
- Arizona Public Services – May **not** have prior rights and should relocate prior to construction.
- City of Surprise – May **not** have prior rights and should relocate during construction.
- City of Goodyear – May have prior rights and should relocate during construction.
- Cox Communication – May **not** have prior rights and should relocate before construction.
- MCI – May have prior rights and should relocate during construction.
- Broadwing Communications – May **not** have prior rights and should relocate before construction.
- Southwest Gas – May **not** have prior rights and should relocate before construction.
- Qwest – May **not** have prior rights and should relocate before construction.